

In the claims:

Claims 1 and 2 (previously cancelled)

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3. (Previously amended) The process of claim 7 wherein the coefficients are prepared by discrete transforms selected from the group consisting of Fourier, Cosine, Sine and Wavelet transforms.
  4. (Previously amended) The process of claim 7 wherein the embedding step uses the least-significant bit of the selected coefficients.
  5. (Original) The process of claim 4 wherein the selected coefficients are chosen at regular intervals.
  6. (Original) The process of claim 4 wherein said coefficients are selected as one of or both frequency and phase coefficients.
  7. (Previously re-written, now currently amended) A process for embedding supplemental data selected from the group consisting of interactive and traditional advertising, merchandising materials, e-commerce solicitations and messages, polls, video games, interactive music and audio/video programs, and computer programs, into a pre-prepared digital media file, that comprises, transforming the media file into encoded sets of frequency domain coefficient representations of the pre-prepared media file information and compressing the file; selecting predetermined coefficient sets; and embedding at rates of the order of thousands of bits per second in media files encoded on the order of a hundred ~~kilobytes~~ kilobits per second and at selected multiple coefficients of each set to produce a supplemental data file containing such embedded data for enabling user decoding and playback of both the pre-prepared media file information and the embedded supplemental data, wherein the embedding steps uses the least-significant bit of the selected coefficients and wherein single bits of data are embedded in each of a number of coefficients of each set and by computing the parity of such least-significant bits of a group of said coefficients.
  8. (Original) The process of claim 7 wherein a perceptual encoding technique is used to select which of a group of said coefficients is to be modified by data embedding.

9. (Original) The process of claim 8 wherein said parity of the least-significant bits of said group of coefficients embeds a bit of data, while minimizing the effect on said user's perception of the media file playback.
10. (Previously amended) The process of claim 7 wherein said playback preserves backwards compatibility of the apparatus used for such playback.
11. (Previously amended) The process of 7 wherein steganographic encoding is employed in which the data is transformed into a bit stream and locations are selected in the media file information where the insertion and embedding of supplemental data bits produce minimal effects in the perception of the user during said playback.
12. (Original) The process of claim 11 wherein said insertion and embedding is effected at the least-significant bit of selected coefficients.
13. (Previously amended) The process of claim 7 wherein digital watermarking is applied to the media file information prior to the embedding of the supplemental data.
14. (Previously amended) The process of claim 7 wherein steganographic encoding is employed in which the data is transformed into a bit stream; sets of coefficients are selected to encompass a range of frequencies in the media file information; and, for each bit in the bit stream, the selected coefficients and the next bit to be encoded are combined to rescale the coefficients and encode such bit as embedded.
15. (Previously amended) The process of claim 14 wherein the media file information is selected to be at least one of audio, image, video, 2D and 3D spline datapoints, and volumetric data files.
16. (Previously amended) The process of claim 15 wherein the media file information is at least one of audio and video information in an MPEG format.
17. (Original) The process of claim 15 wherein the media file information is image file information in a JPEG format.
18. (Original) The process of claim 15 wherein the spline data is one of Bezier curves and NURBS.
19. (Original) The process of claim 15 wherein the volumetric data is compressed by using a 3D transformation.

20. (Previously amended) The process of claim 7 wherein the media file contains one of audio, image, video, 2D and 3D splines, volumetric and multimedia information.

21. (Cancelled)

22. (Previously amended) The system of claim 27 wherein the media file information is selected from the group consisting of audio, image, video, 2D and 3D splines, volumetric and multimedia information.

23. (Original) The system of claim 22 wherein the first-named encoding means prepares said coefficients by one of Fourier, Cosine, Sine and Wavelet transforms.

24. (Previously amended) The system of claim 27 wherein, in operation, the further encoding means uses the least-significant bit of the selected coefficients.

25. (Original) The system of claim 24 wherein the selected coefficients are chosen at regular intervals.

26. (Original) The system of claim 24 wherein said coefficients are selected as one of or both frequency and phase coefficients.

27. (Currently amended) A system for embedding supplemental digital data selected from the group consisting of interactive and traditional advertising, merchandising materials, e-commerce solicitations and messages, polls, video games, interactive music and audio/video programs, and computer programs, into a pre-prepared digital media file having, in combination, encoding means for transforming the media file information into sets of frequency-domain coefficient representations of the pre-prepared media file information and for compressing the file; means for selecting predetermined coefficient sets; and further encoding means for embedding at rates of thousands of bits of said supplemental digital data per second in a media file encoded on the order of a hundred of kilobytes kilobits per second and at selected multiple coefficients of each set to produce a supplemental media file containing such embedded data for enabling user decoding and playback on playback apparatus of both the pre-prepared media file information and said embedded supplemental data, wherein the further encoding means uses the least-significant bit of the selected coefficients, and wherein the further encoding means embeds single bits of data in each of a number of coefficients of each

set and by computing the parity of such least-significant bits of a group of said coefficients.

28. (Original) The system of claim 27 wherein a perceptual encoding technique is used to select which of a group of said coefficients is to be modified by data embedding.

29. (Original) The system of claim 18 wherein the further encoding means responds to said parity of the least-significant bits of said group of coefficients to embed a bit of data, while minimizing the effect on said user's perception of the media file playback.

30. (Previously amended) The system of claim 27 wherein said playback preserves backwards compatibility of the playback apparatus.

31. (Currently amended) A process for embedding supplemental digital data into a compressed-digital information stream, that comprises, encoding the compressed digital data stream as a set of coefficient representations of said information; and embedding at least thousands of bits/second of said supplemental digital data in information streams encoded on the order of a hundred of ~~kilobytes~~ kilobits per second, at selected multiple coefficients of said set to produce a stream containing such embedded data for enabling user decoding to present both said information and the embedded supplemental data.

32. (Currently amended) A process for embedding supplemental digital data selected from the group consisting of interactive and traditional advertising, merchandising materials, e-commerce solicitations and messages, polls, video games, interactive music and audio/video programs, into a digital information stream, that comprises, transforming the stream into encoded sets of frequency-domain coefficient representations of said information and compressing the same; selecting predetermined coefficient sets; and embedding thousands of bits/second of the supplemental digital data in information streams encoded on the order of a hundred of ~~kilobytes~~ kilobits per second and at selected multiple coefficients of each set to produce a supplemental data file containing such embedded data for enabling user decoding to present both the said information and the embedded supplemental data.

33. (Previously added) The process of claim 32 wherein the selected coefficients are chosen at substantially regular intervals.

34. (Currently amended) A process for embedding supplemental digital data selected from the group consisting of interactive and traditional advertising, merchandising materials, e-commerce solicitations and messages, polls, video games, interactive music and audio/video programs, and computer programs, into a compressed-digital information stream, that comprises, encoding the compressed digital information stream as a set of coefficient representations of the pre-prepared media file information; embedding portions of said supplemental digital data at rates of thousands of bits per second in information streams encoded of the order of a hundred of ~~kilobytes~~ kilobits per second and at selected multiple coefficients of said set to produce a media file containing such embedded data for enabling user decoding and playback of both the pre-prepared media file information and the embedded supplemental data, wherein single bits of data are embedded in each of a number of coefficients of each set and by computing the parity of the least significant bits of a group of said coefficients.

35. (Previously amended) The process of claim 34 wherein said computing comprises modifying the parity of groups of a number of coefficients, embedding a bit in each set of coefficients.

36. (Previously amended) The process of claim 34 wherein watermarking digital data is also applied to the media file, but prior to the embedding of said supplemental data.

37. (Previously added) The process of claim 32 wherein a bit of said supplemental data is embedded in each of from 4 to 16 coefficients.

38. (Previously added) The process of claim 32 wherein the parity is modified in groups of eights or more coefficients.

39. (Previously added) The process of claim 32 wherein the encoding is used to encode a bit in each set of coefficients until the supplemental data is completely embedded.

40. (Previously added) The process of claim 32 wherein the first byte of the supplemental data is encoded in a number of coefficients using 8 coefficients, and all succeeding bytes are encoded using the number of coefficients specified in said first byte.

41. (Previously added) The process of claim 38 where in the group of eight coefficients, every seventh coefficient is selected in the supplemental data such that seven bits are encoded in a set of 56 coefficients.

42. (Previously added) The process of claim 41 wherein each group of coefficients contains coefficients that represent a wide range of frequencies.

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